121 informants or locations, another dimension is added here. Individ-
114 uals can be identified and the establishment of trans-generational
124 continuity is possible.

121 Two areas of theoretical concern particularly lend themselves to
*177 investigation under the fortuitous circumstances of being able to
[161] trace changes occurring over time among a specific group. The first
is cultural change: the second, human population control mechanisms.

175 In regard to cultural change, until forty years ago the Caribs
*177 of the Upper Barama River were adapting to the equatorial rain
182 forest with essentially a lithic technology. They combined hunting,
[22] fishing, and collecting with a semi-nomadic form of horticulture.
[241] Currently, the majority of these Caribs are settled at a community
*177 known as Baramita Air Strip. They engage in wage employment, make
[465] use of regional markets for local products, participate in agricul-
[438] tural development programs, and benefit from national medical
[242] programs. From a position of relative isolation in the rain forest,
[65?] this group has been increasingly encapsulated in the national
[161] political economy. Attending this development has been changes in
their population size and composition as well as internal organiza-
tion. These changes are a major focus of the present study.

121 In pursuing the analysis of these changes, cultural materialism
is relied upon as the most economical mode of explanation. Among
others, Harris (1968) has proposed that techno-environmental
'determinants can serve in a comparative approach to cultural
adaptation. One example of this approach is Murphy and Steward's
comparison of the Mundurucu of Brazil and the Northeastern

2: Adams E-4,5 (1970-1971) 1973 SR9 Carib SR9
(1932-1971) Barama River

IV

MARKET OPPORTUNITIES: REGIONAL NETWORKS OF EXCHANGE

Over time, the subsistence economy of the Upper Barama River Caribs has been supplemented by various regional markets. As a consequence, the common material exchanges that serve the Upper Barama River Caribs as a population have changed. An increasing extralocal involvement in regional networks of exchange has been added to a local adaptation to the rain forest, and new resources have been made available to this population.

During Gillin's study in 1932-33, subsistence resources were derived primarily from the natural environment. The similar nature of the local adaptations of the Carib settlements dispersed along the Upper Barama River corridor has been discussed. There was no apparent basis for specialization and trade among settlements. Within each settlement, material property was individually owned. A man owned his clothing, field, house, hunting and fishing equipment, canoe, tools, and the game he caught (Gillin 1934:335). A woman owned her clothing, implements for working in the field and house, including pottery and basketry (although basketry was exclusively made by the men in their household). All tools were usually manufactured by the individual owning them or someone in their household. Within settlements, food was distributed, tools were shared, and assistance rendered in the activities of making a living in the bush.

*177 175 438 443 The trade store was the main vehicle for the involvement of the remainder of the population in regional exchange. With the establishment of Baird's enterprise, there was a constant call for local foods which the trade store stocked. Caribs not employed at the mine were then able to sell these foods on a more or less planned basis. The residents of Aranka, Baramita, and later the Air Strip, did this regularly. Caribs in the more remote settlements made more infrequent trips. However, the quantities required were limited. No special fields were cut nor special crops planted. Part of the regular subsistence production was used for these exchange purposes. Also, there operated informal consignment agreements. When a supply of meat, cassava, plantains, yams, or whatever ran low, individual men were invited to bring these to the store. Often no money changed [439] hands. Rather, small accounts were kept. In addition to exchanges centralized by the trade store, some exchanges occurred directly between Caribs. The prices used were those at the trade store. Also, 175 *177 799 439 for a short time, the missionaries contributed to the market opportunities in the area by occasionally hiring a few laborers, by buying some local handicraft items, and by selling food and clothing.

*177 175 657 622 Before the mine closed in 1969, one other development occurred which further involved this population in regional exchange networks. A local administrative structure, devised and implemented by the Ministry of Local Government, has been imposed on Amerindian populations to promote national political integration.[3] Amerindian [666] offices were first introduced among the Upper Barama River Caribs with an election held at In Time in October 1967. From among four

candidates who were unemployed at the time, one man was selected by the largest number of votes to serve as Captain for a four-year term. Other candidates for the Captaincy became Councillors. Of these offices, only the Captaincy is a salaried position. It receives $150 a month.[4] The duties of these offices, which have been more clearly defined with the government settlement project at Baramita Air Strip, have provided a basis for the redistribution of the Captain's salary to a wider section of the population. However, the office of Captain among the Upper Barama River Caribs does not differentiate the officeholder in any sustained fashion from the rest of the population. Similar to other forms of local employment in the Upper Barama River area, the Captaincy is not a vehicle to gain a control in regional markets or to accumulate deployable forms of capital.

Previous to the establishment of the mining companies, the dispersed Carib settlements tended to be closed with regard to obtaining and sharing local subsistence resources. This pattern was apparently little disturbed by the first trade goods brought by the mobile porknockers. However, the money economy and the centralized channels of regional exchange introduced by the mining companies markedly altered Carib subsistence. External resources came to be critical to the subsistence patterns of the expanding local population, and settlements became more centralized around their source. In 1969, Baird's mining activities were directly supporting 171 individuals or 33.9 percent of the total Carib population at the time. Located nearby at Baramita, Aranka, and the Air Strip, another 190 individuals

*177 175 361 438 [484] or 37.7 percent of the total population frequently sold provisions at the trade store. This segment of the population also participated in the ancillary regional exchange networks provided by the missionaries and the Amerindian Captain. The remaining 28.4 percent of the population, the 143 individuals in the more remote settlements, made more infrequent trips to the trade store at In Time. Either through informal trade among Caribs themselves or the centralized channels created by the trade store, mining activities involved the entire local population in a common network of regional exchanges. In turn, this network was changed by the abandonment of In Time.

Regional Exchanges Centralized at Baramita Air Strip

*177 175 464 511 The cessation of mining activities late in 1969 again altered the subsistence patterns of the local Carib population. That segment of the population dependent on employment at the mine and maintaining no farms was faced with a subsistence crisis. The opportunities for the remainder of the population to sell provisions was greatly reduced.

*177 175 464 657 During the spring and summer of 1970, the Government began introducing programs and services to sustain this population. The new governmental offices have already been detailed (see Figure 3). The resources conveyed to the population through these new channels remain to be discussed. As data are available only for the first year of these new programs at Baramita Air Strip, this must remain a preliminary report.

*177 182 [463] The first year at the Air Strip was one of general parsimony. Job specialization among the Caribs was almost eliminated and everyone returned to rain forest subsistence.

*177 the small aircraft. As is common in the handling and transportation
659 of tropical fish, many would die. Up to as many as ten percent of
226 the fish would be lost in transit to Georgetown, and the proprietor
439 cut the price to 4 1/2¢ per live fish he received. After a few
thousand catfish had been sent to Georgetown, tropical fish operations
were suspended.

*177 With this proliferation of small market opportunities, a money
• 438 economy continued to develop in the Upper Barama River area after the
436 closing of the mine. A government trade store is now located at
*177 Baramita Air Strip and operated by the Project Officer. During
657 1970-71, the minimal stock of tinned sardines, salt fish, flour, rice,
443 sugar, cigarettes, matches, ammunition, cutlasses and knives, cloth
438 lengths, pants and shirts, school exercise books and pencils was
439 sometimes depleted by delay in the shipment of supplies from George-
*177 town. More often, Caribs did not have the cash to make purchases.
436 Money tended to be a more specialized means of exchange. Only it could
[182] be used to purchase commercial goods. As a consequence of the limited
circulation of money among this population, there occurred a renewed
*177 reliance on bush resources for food and tools. Secondary networks
438 for the exchange of local provision foods greatly disappeared. A
[464] marked separation of those employed and unemployed during the mining
*177 economy was lost. In contrast, a diversity of limited opportunities
438 to directly participate in regional exchanges was available more
439 generally to the population at Baramita Air Strip. In this manner,
[657] the regional economy among the Upper Barama River Caribs has been
supported by the national government since the closing of the mine.

*177 438 439 Since Gillin's time, miners, missionaries, and government projects have all combined to provide this population with market opportunities. Wages and external resources have come to be central in the problem of making a living in the bush. However, Caribs exercise little or no control of the market opportunities, nor do they have the means to travel to reach other markets. To this extent, the Upper Barama River Caribs have remained detached from managerial or entrepreneurial roles in their participation in regional exchanges. The conveyance of market opportunities into the Upper Barama River area has remained highly dependent on non-Carib middlemen. There are no intervening regional market networks with adjacent populations. Rather, exchange is directly with individuals who have come into the frontier from a center of commercial and governmental activity, Georgetown, and bring with them transportation and communication ties back to this center. With the considerable flux of individual middlemen and the market opportunities they have brought into the area, specific sources of regional trade have been marked by their impermanence. Thus, the Upper Barama River Caribs have increasingly become a population encapsulated within and dependent upon the national society.

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*177 43 The relationships Caribs have had with middlemen reflect the highly fluid nature of regional exchanges. In the face of the obviously uncertain markets conveyed by the porknockers, Caribs remained uncommitted to these resource opportunities. In contrast, the men from the mining companies stood in a position of increased resource demand and control of the regional transportation and communication networks.

[571] The more established nature of mining company enterprises promoted

*177 43 [570] *177 43 241 patron-client relationships in which Carib clients could also make limited demands on their employer. Generally, the degree to which these new opportunities were available to Caribs was reflected in a neglect of bush agriculture. Over time, this neglect proved to be precarious. These markets dissolved with the cessation of gold mining, leaving former miners and their families with no immediate [622] [571] relationship to a source of provisions. The new governmental offices, including that of Amerindian Captain, and officeholders do not have a record of sufficient permanence and assured access to stores of external resources to aggregate around them individuals in client positions. Although prominent among the new markets, cash crops have not replaced subsistence crops to any substantial degree. During the period of field work, no Carib was dependent for survival on the cash crops he grew. Rather, this activity was pursued in addition to subsistence farming and the income was used as pocket cash to make purchases among the commercial items at the trade store. In this manner, Caribs were not critically dependent on networks for the regional exchange of such refractory commodities as agricultural produce.

*177 438 241 In short, regional markets have been impermanent. Even so, they have made available wages and external resources that have attracted the participation of the Carib population. Caribs can take part in these market opportunities and hedge against their insecurity only in so far as they maintain some level of bush agriculture. This is possible without restriction, as throughout the various human occupations in the Upper Barama River drainage basin, there is no

indication that the natural environment has been permanently degraded in any manner. However, some Caribs have neglected bush farms; specifically, those who regularly worked as miners at In Time. With the rupture of their source of provisions, the former miners and their families were faced with a subsistence crisis when In Time was closed. As an emergency measure, government subventions were introduced to sustain these people while they re-established bush farms. This was not a simple matter of waiting for the first crop. Although the manioc cultivated by the Upper Barama River Caribs is usually mature in nine months, it was commonly harvested as early as four months by the residents of Baramita Air Strip during 1970-71. Immature manioc obviously yields less calories than the mature crop, and a deficit in future crops was established. Also, a closer scouring of the natural environment for all sources of food, however minute, and, inevitably, hunger ensued among the Carib population at Baramita Air Strip.

In their remote rain forest environment, there have been no opportunities among the local Carib population to acquire resource banks which might include livestock, real estate, local enterprises such as shops or other mechanisms to divert, store, or otherwise manipulate the resources conducted through regional networks. Even agricultural fields, a primary local resource, are dependent on the labor extended to develop them and are eventually reclaimed by the forest. This underscores the lack of any other basis to hedge against the insecurity of external resources except to continually spend the labor to maintain farms in the bush. In the same manner, there is

*177 438 21 [4(3)] In the same manner, there is no basis for the differentiation of individuals in the Carib population on any sustained basis. Instead, the utility of external as well as local resources has remained in the immediacy of their availability to the local Carib population.

*177 438 177 421 Throughout the changes in the regional networks of exchange involving the Upper Barama River Carib population, some economic dimensions have remained unchanged. The nature of material property and its personal ownership are as Gillin describes them. A man owns his clothes, farm, house, hunting and fishing equipment and other tools, and the game he catches. A woman owns her clothes and tools for working on the farm and in the house. Nowadays, many commercial goods are among the property owned by men and women, and cash income has been used to obtain them. Although men's activities have changed to include employment and other market endeavors, women have remained in their domestic domain. Even though some Carib men have been separated from a subsistence relationship to the rain forest, they have not been separated from the household context which provides a male-female partnership for returning to and maintaining a subsistence in the bush. This continuity is apparent in the organization among the Upper Barama River Caribs to exploit the different resource situations.

the retention of father and son and son-in-law bonds among workers, as well as by the centralization around the air strip. Temporary cooperation to aid relatives in settling in a new location is also a factor in the current residence situation. At this time little analysis can be made of the life cycles of family groups or of individuals. Data are available only on the first year of the resettlement around the air strip, a time of considerable change in the extent and nature of the external resources available in the Upper Barama River area. Family organization is responding to these new circumstances.

The population in the satellite settlements, Baramita and Aranka, has had a different experience with the regional economy. Among these segments of the population, men have had little or no employment. The headman of Aranka worked about five separate one-year periods in his youth with porknockers. Another man from Aranka worked for two years at In Time while living with his father. Now he is one of the headman's sons-in-law. Also, men from Aranka have been employed from time to time by the Malaria Eradication Officer. For the most part, the populations in these settlements have maintained a subsistence adaptation to the rain forest. Their livelihoods have been supplemented by selling small amounts of local provisions for commercial items at the trade store.

The residence patterns in these satellite settlements are somewhat different and they also differ from that characteristic of the households at the Air Strip. At Baramita in 1971, there were five clearings. One was inhabited by a man and wife and their children. Two others were nuclear families recently extended by the addition of

2: Adams E-4,5 (1970-1971) 1973 SR9 Carib SR9
(1932-1971) Barama River

VI

CONCLUSIONS

In the previous chapters, attention has been given to the correlations over time of resources available for exploitation and the size and organization of a single population. The economic and reproductive adjustments of the Upper Barama River Caribs have been investigated. In their specific pathway from relative isolation in the rain forest into a national political economy, social organization and population size have been related to resource development. As this population has been centralized by common participation in networks of regional exchange, the household has emerged as the resource-sharing social unit. Ties of general reciprocity with a wider kinship group have tended to be dissolved. Another type of organization which has emerged to consolidate advantage in the regional economy has been client relationships with a middleman patron. In addition, external sources of food and clothing and medical care have tended to override relationships between population size and adaptation to local rain forest resources. An accelerating rate of population growth is currently evident among the Upper Barama River Caribs. In short, this population has evidenced changes in organization and increased population size under the conditions of its national integration.

Adapting to the rain forest, the Upper Barama River Carib population participated in the direct organism-to-organism cycling of

241 energy characteristic of this environment. Slash-and-burn cultivation
182 is a replication of the rain forest, and in this manner, human groups
105 do not extend their niche through agriculture but rather integrate food production with the extant biotic community (Geertz 1963:15-28; Meggers 1971:19-21). The productivity of cultivation, hunting, fishing, and gathering were the essential components of subsistence, and the Upper Barama River Caribs, limited in population size, shifted in location as a response to these endeavors. As a consequence of this semi-nomadic adaptation, the largest social unit was the settlement, within which the sharing of resources and the exchange of labor were patterned.

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In contrast, wage labor and other regional markets and modern medical technology have combined to expand the niche of the Upper Barama River Carib population. In turn, population size has expanded. At the time of Gillin's (1936) study in 1932-33, the Upper Barama River Caribs numbered about 200 and were located in dispersed settlements along the river corridor. There are now more than 550 Caribs nucleated around Baramita Air Strip. This increase in size has been achieved despite losses due to migration. The current rate of increase is about eight percent annually. Coupled with a low death rate, this is indicative of the potential for further increases among this population. Using population size as the coefficient of adaptation as proposed by Alland (1967, 1970), clearly a successful adjustment has been made to the new resources available over the short term generation-to-generation time span.

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In this context, any projections for either the future of the